

**AMIGA<sup>®</sup>**  
*500<sup>™</sup> Series*

**Introducing the A500 and A500 Plus**



Commodore<sup>®</sup>

*Introducing the*

**C<sup>®</sup> Commodore<sup>®</sup>**

**AMIGA<sup>®</sup>**

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**500<sup>™</sup> SERIES**

**A500 / A500 Plus**



## **Introducing the A500 and A500 Plus**

**First Printing June 1991**

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- Reorient the receiving antenna or AC plug.
- Change the relative positions of the device and the receiver.
- Plug the device into a different outlet so the device and receiver are on different circuits.

**CAUTION:** Only equipment with shield-grounded cables (computer input-output devices, terminals, printers, etc.), certified to comply with appropriate FCC limits can be attached to this device. Operation with non-certified equipment may result in communications interference. Changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

Your house AC wall receptacle must be three-pronged type (AC ground). If it is not, contact an electrician to install the proper receptacle. If a multi-connector box is used to connect the computer and peripherals to AC, the ground must be common to all units.

If necessary, the user should consult the dealer or an experienced radio-television technician for additional suggestions. The user may find the following booklet helpful prepared by the Federal Communication Commission: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, stock no. 004-000-00345-4.

Reprinted in the United Kingdom October 1991

## **About this Book**

*This book introduces you to the Commodore® Amiga® 500™ Series of computers, briefly describes the major components and features of the Amiga 500 family, and tells how each works.*

*Please read this book and Chapter 1 of the Using the Amiga Workbench™ manual included with your computer. You should then be ready to use programs like word processors, spreadsheets, etc. Of course, you will also have to read the manual for each program you want to use.*

*The Amiga 500 computers are sophisticated, powerful machines. As you are using your computer you may find that you need or want additional information on its general operation and specific features. Detailed hardware information on the A500 Series is provided in the appendices to this manual. Detailed software information is provided in the Using the Amiga Workbench manual.*

**NOTE: Read this introductory book either before or after you unpack and set up your computer. HOWEVER, WHEN YOU DO SET UP YOUR COMPUTER BE SURE TO FOLLOW THE INSTRUCTIONS GIVEN IN THE AMIGA 500 SERIES QUICK CONNECT.**

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## Chapter 1

# Overview of the Amiga® 500 Series

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The Amiga 500 Series is a family of extremely advanced, powerful personal computers. The Series includes the A500 and the A500 Plus models. Incorporating all the unique features of earlier Amiga computers, the A500 Series offers a Motorola® 68000™ microprocessor and sophisticated custom chips for enhanced computing speed and versatility. The A500 Series computers are advanced yet easy to use — even a computer novice can be up and running with a minimum of effort.

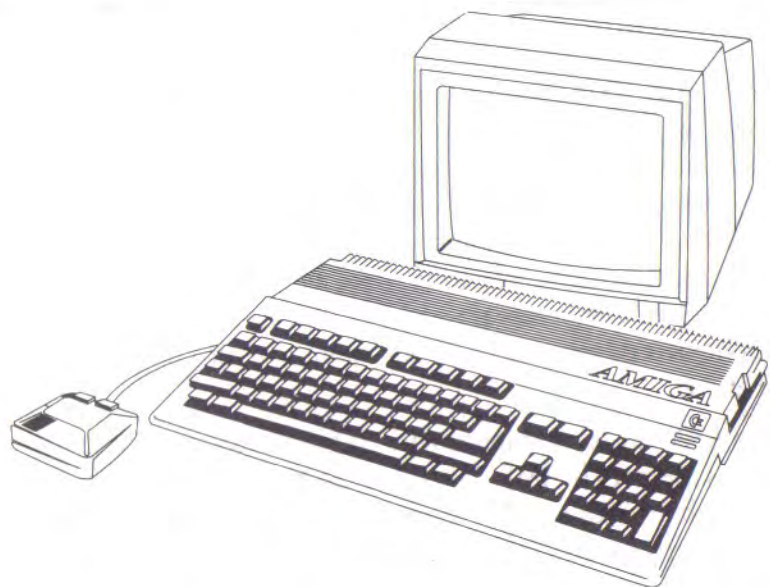
The A500 model is shipped with 512 kilobytes of random access memory (RAM). This RAM can be easily expanded to 1 megabyte with an A501 memory expansion cartridge. The A501 cartridge also features a battery backed-up real time clock.

The A500 can also be expanded to include a hard drive and additional RAM with the addition of an A590 card.

The A500 Plus model is shipped with 1MB of RAM and a battery backed-up real time clock. RAM on the A500 Plus can be expanded to 2MB with the A501 plus memory expansion cartridge.

Both models in the A500 Series feature a new and improved operating system called AmigaDOS™ 2.0. This operating system, in conjunction with new custom chips, supports the video resolutions explained later in this guide.

## The Parts of Your A500 Model

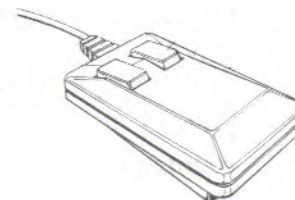


- **The Main Unit** — Houses the 68000 CPU (central processing unit), the “brain” of the A500 model. The main unit also contains:
  - *memory, processing chips, and specialized components, including:*
    - system RAM
    - sound and graphics chips
  - *disk drives*
  - *external connectors, for optional external peripheral equipment, such as:*
    - printers
    - modems
    - disk drive
    - video equipment
    - audio equipment
- **The Power Supply**

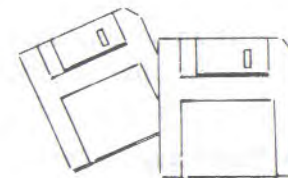
- **The Keyboard** — Provides a full typewriter-style layout, plus a standard numeric keypad and a set of program-activated function keys. The keyboard is used to communicate information and instructions to the computer, and to respond to messages from the computer. Many mouse functions (see below) can be performed via the keyboard. *The keyboard is built into the main unit.*



- **The Mouse** — Controls the movement of a small, arrow-shaped pointer on the display screen. When you move the mouse over a flat surface like a desk, the pointer on the screen moves accordingly. You transmit instructions to the Amiga by clicking on the mouse buttons. *The mouse connects to the mouse port (labelled Joystick 1) on the back of the main unit.*

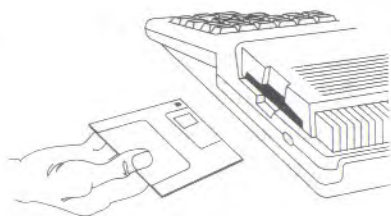


- **Floppy Disks** — Thin, square, hard plastic devices containing a circular piece of magnetically coated material. Floppy disks are used to store information and programs that tell the computer what to do. Amiga floppy disks are 3.5 inches across and can hold approximately 880,000 characters of information.

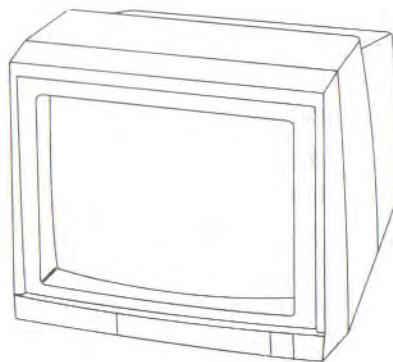




- **Floppy Disk Drive(s)** — When a floppy disk is inserted into the floppy disk drive, the computer can be instructed to obtain (*read*) information from the disk, or send (*write*) information to it. *The standard A500 model includes one floppy disk drive, located on the right side of the main unit.*



- **Monitor** — Displays information generated by the computer's operating system and your programs. The monitor may be one of several types, and may or may not be included as part of the Amiga 500 Series package, depending on the country of purchase. *Depending on its type, the monitor connects to the RGB or Mono port on the back of the main unit.*



The A500 Series can also be connected to a television set with an optional modulator that plugs in to the RGB port. The modulator, cable, and a TV switch box can be purchased from your Amiga dealer.

- **Peripherals** — External peripherals (printers, modems, and disk drives) can be added to your Amiga. See the *Amiga 500 Series Quick-Connect* and Appendix D of this manual for the basic external setup and connection instructions.

## The A500 Series Documentation

In addition to this manual, your A500 model package includes the following documentation:

- **QUICK CONNECT—How to Set Up the Commodore Amiga 500 Series**

This booklet tells how and where to connect the Amiga equipment, including optional devices. The booklet folds out to become a poster. You can hang the poster in a convenient spot while you follow the instructions.

- **USING THE AMIGA WORKBENCH**

This manual provides comprehensive information on the Amiga operating system. The manual includes detailed coverage of the *Workbench*, the basic user interface for the Amiga. The manual begins with a tutorial aimed at the new user. Subsequent sections build on this base, introducing advanced Workbench features.

This manual also introduces AmigaDOS, the operating system that manages the Amiga's computing resources.

## Chapter 2

# Features of the Amiga 500 Series

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### Hardware and Software

#### **68000 Microprocessor**

The central processing unit of the A500 Series is a Motorola 68000 microprocessor running at a clock speed of 7 megahertz (MHz). (Clock speed, given in MHz, is one measure of how fast a computer's microprocessor can perform tasks.)

#### **Graphical User Interface (GUI) Processing**

A *Graphical User Interface (GUI)* allows you to tell the computer what to do by selecting graphic symbols (in the form of *icons*, or small pictures), rather than having to type in words or commands. Because the icons are displayed automatically by the computer, you don't have to memorize a long list of commands or keystrokes to get the computer to respond correctly to your instructions. This makes a GUI easy to use.

Amiga computers provide a versatile GUI known as the *Workbench*. For an introduction to the basics of the *Workbench*, see Chapter 3 of this manual. For complete details on the *Workbench*, refer to the *Using the Amiga Workbench* manual included with your computer.



## Command Line Processing

In *command line processing*, you type in each command or instruction to the computer. Although command line processing is not as simple to use as GUI processing, command line instructions can be made very precise. Command line processing can therefore be very useful — even essential — in advanced processing situations.

Amiga computers offer a sophisticated, easy-to-use command line processing system known as the *Shell*. With the Amiga's multitasking capabilities, you can open a number of Shells at one time and run more than one program simultaneously.

For added versatility, the Workbench and Shell work together. You can load the Workbench using the Shell, and you can call up the Shell from the Workbench. (See the *Using the Amiga Workbench* manual for details on the Shell.)

## Multitasking

*Multitasking* is the ability of a computer to handle a number of tasks or programs operating simultaneously. This concurrent activity does not require any action by the user, and does not depend on special programming techniques. Multitasking is unique to the Amiga line of computers, when compared with computers in or near their price ranges.

## Text-to-Speech Conversion

The Amiga has the ability to convert text input directly to speech. There are controls for rate, pitch, volume, inflection, and even type of voice (male, female, computer). This is another standard ability that is unique to the Amiga family of computers.

## Stereo Sound

The Amiga has four independent sound channels, normally configured as two stereo channels. This sound system can reproduce complex waveforms and perform 8-bit digital-to-analog conversions.

## Graphics Capabilities

This section summarizes the types of screen displays that you can use with your A500 model of computer. (The type of screen display is also referred to as the *display mode*.) For details on the display modes available, see Chapter 3 in the *Using the Amiga Workbench* manual.

Changing the display mode changes the number of pixels that make up the screen. This is also known as the screen resolution. The higher the number of pixels, the sharper the image becomes.

The standard Workbench screen that appears when you turn on (boot) your computer is 640 pixels wide (left to right). Its height is determined by your country's video standard: NTSC, the video standard used in most of North America, parts of Latin America, and Japan; or PAL, the video standard used in Europe, Australia, and New Zealand. For an NTSC display, a high resolution (Hires) non-interlaced screen is 200 pixels high (top to bottom); for a PAL display, it is 256 pixels high.

(*Interlaced* is a term used to describe a video display that scans first the even-numbered lines (1, 3, 5, etc.) and then the odd-numbered lines (2, 4, 6, etc.) to achieve a higher-resolution (sharper) video image.

Certain software, like desktop publishing, or CAD/CAM programs, require this higher resolution in order to present the information clearly. For instance, if a desktop publishing program is used with a standard resolution screen (640 x 200/256 pixels), the text will not be clearly defined—circular letters may have jagged edges or portions of letters may appear to be missing. You will not be able to see a true representation of your page. However, the same page on an Amiga Hires-interlaced screen (640 x 400/512 pixels) will have more resolution. It will more closely resemble the printed output.



Note that an interlaced display may flicker when used with certain monitors. In order to eliminate the flicker, the improved version of the Amiga custom chips installed in the A500 Series computer provides a new mode called *Productivity Mode*. When used in conjunction with a multiscan monitor, this mode produces a 640x480 resolution without flicker. (This mode is especially useful for applications like word processing, spreadsheets, and desktop publishing.)

The display modes available to you depend upon the type of monitor you are using. Interlaced screens may flicker when used with certain monitors.

The following chart lists the display modes, the hardware needed to use that mode, and the standard screen sizes.

Display Modes			
Graphics Display Mode	Monitor Required	Standard Screen Size (Pixels)	Maximum Number of Colors
Hires	1084S	640 x 200/256	16
Hires Interlaced	1084S	640 x 400/512	16
SuperHires	1084S	1280 x 200/256	4
SuperHires Interlaced	1084S	1280 x 400/512	4
Productivity	1950	640 x 480	4
Productivity Interlaced	1950	640 x 960	4
A2024/10Hz	A2024	1008 x 800/1024	4 shades of grey
A2024/15Hz	A2024	1008 x 800/1024	4 shades of grey

Note that the display mode you choose only pertains to the Workbench screen. (See Chapter 3 in this manual and the Workbench chapters in the *Using the Amiga Workbench* manual for information on the Workbench.) If your software

application opens its own screen, you should check the documentation for the application to see which display modes the application supports.

Your Amiga 500 Series computer additionally supports the following display modes, which are not used by Workbench but which are available to applications which open their own screens.

A500 Display Modes		
Graphics Display Mode	Standard Screen Size (Pixels)	Maximum Number of Colors
Lores	320 x 200/256	32
Lores Interlaced	320 x 400/512	32
HAM	320 x 200/256	4096
HAM Interlaced	320 x 400/512	4096

## For More Information . . .

The features described in this chapter have been selected to show the A500's wide range of capabilities. Refer to the appendices of this manual for more information on your specific A500 model's hardware features. Refer to the *Using the Amiga Workbench* manual for more information on Amiga software features.



## Chapter 3

# Getting Started

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This section introduces the basics for using your A500 Series computer.

For full details, you should read the *Using the Amiga Workbench* manual packaged with your computer. This manual provides complete information on the Workbench, which is the graphical user interface for users who are new to the Amiga. The *Using the Amiga Workbench* manual includes step-by-step tutorials on each feature of the Workbench. You will, of course, have to follow the instructions given in the user's manual for each program that you want to use.

**NOTE:** As a result of Commodore-Amiga's ongoing product improvement program, the displays shown in this manual may differ slightly from those that appear on your monitor.

## About Software

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*Software* is a set of instructions (often called a *program*) that tells your computer what to do. There are many kinds of software, including:

- application programs, such as word processors, video titlers, spreadsheets, databases, games, drawing programs, music programs, etc.
- programming languages, such as BASIC, C, AREXX™, etc.

- utilities, such as file management programs or font editors
- operating systems, such as AmigaDOS, which control how your Amiga interacts with you and with the equipment in your system

Software is contained on some form of *storage medium*, most often a *floppy disk* or a *hard disk*. For those new to computing in general or to Amiga computing in particular, the next section provides an introduction to floppy and hard disks.

## About Disks

There are two main types of computer disks: floppy disks and hard disks. Floppy disks offer low cost and transportability. Hard disks offer high speed and relatively large storage capacity.

Information on disks is stored magnetically, in somewhat the same way that sound is recorded on audio tape. You can copy the information on a disk to another floppy disk or hard disk, or to other storage media (e.g., tape).

A computer can include both floppy drives and hard disk drives, as well as other storage devices, such as a tape unit. Your computer includes one floppy disk drive; a hard drive can be added as an option. Additional floppy disk drives are available from Commodore and third party manufacturers as an external add-on peripheral. Additional hard disk drives are available from third party manufacturers as an external add-on peripheral.

## Floppy Disks

Floppy disks are sheets of magnetically coated material enclosed in a square protective cover. In order for the computer to *read* (retrieve) information from a disk or to *write* (save) information to a disk, you must insert the disk in a floppy disk drive.

The 3.5 inch floppy disks used with the A500 Series have a rigid plastic shell and a metal cover (known as a *shutter*) for protection against damage, fingerprints, etc. Each Amiga 3.5 inch floppy disk holds 880 *kilobytes* (abbreviated **880K**) of data. This is roughly equivalent to 400 typewritten pages.

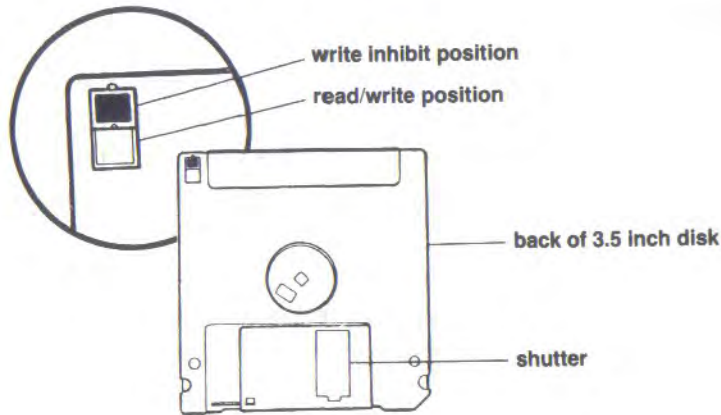
## Protecting Floppy Disk Information

Note the small plastic tab on the back of each floppy disk. This is known as a *write-protect* tab. When you receive your disks, the tab on each disk should be in the upper position (i.e., at the top edge of the disk). This position is known as the *write-inhibit* position. When the tab is in this position, you should be able to see through a small hole in the plastic disk cover.

With the tab in this position, you can *read* (that is, retrieve) the information on the disk, but you cannot *write* to the disk (that is, you cannot change the information or add new information).

If you want to *write* to the disk, simply move the tab down (i.e., toward the middle of the disk), so that it covers the hole. This position is known as the *write-enable* position.





Although the disk housing is relatively sturdy, you should follow certain rules in handling the disks. For a list of these rules, see the *Caring for Your Amiga* section at the end of this chapter.

**IMPORTANT:** In addition to the 3.5 inch Amiga disks packaged with your computer, you should always have some blank 3.5 inch floppy disks ready. (You can get blank disks from various sources — your Amiga dealer, computer stores, office supply stores, etc.). Use only double-sided, double-density disks.

## Hard Disks

Hard disks typically hold from 10 megabytes to hundreds of megabytes of data (the upper limit for storage capacity is being raised continually). A hard disk is enclosed in a sealed housing. Information moves to and from the hard disk electronically — the disk is never touched by the user.

An optional hard disk, the A590, can be added to both the A500 and the A500 Plus.

See the *Using the Amiga Workbench* manual for more information on using a hard disk.

## Backing Up Your Original Disks

Before you do anything else with your computer, you should **BACK UP** (that is, make a copy of) your floppy disks. By backing up your floppy disks, you will ensure that even if a disk is lost or damaged you will still have a copy of it.

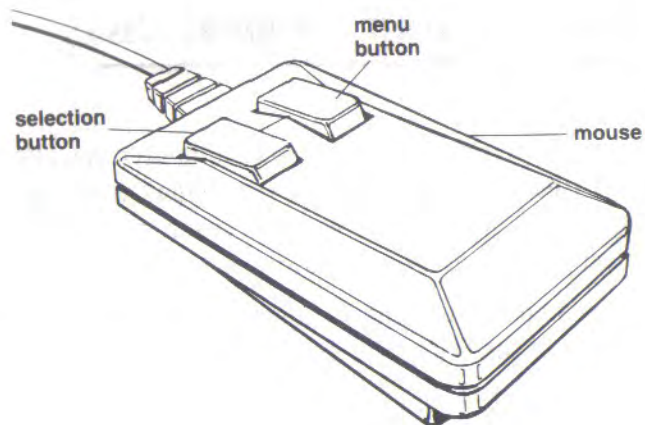
For step-by-step instructions on how to copy floppy disks, refer to Chapter 1 of the *Using the Amiga Workbench* manual.

When you've made a copy of a disk, put the original in a safe place and use the copy, called a *working disk*, for everyday use. If you lose or damage a working disk, you'll always be able to make another working disk from the original.

## About the Mouse

While working with your computer you will generally be using the *mouse*. The mouse controls the movement of a small, arrow-shaped pointer on the display screen. When you move the mouse over a flat surface like a desk or table top, the pointer on the screen moves in the same direction as the mouse.

There are two buttons on the mouse. The left mouse button is called the *selection* button; the right button is called the *menu* button. These terms are explained later in this section.



For details on caring for the mouse, see the *Caring for Your Amiga* section at the end of this chapter.

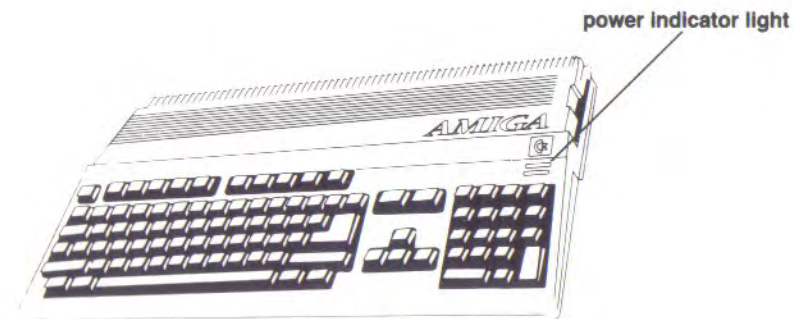
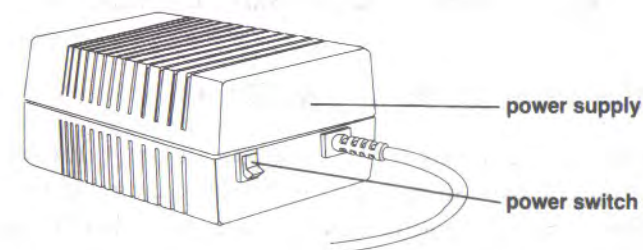
**NOTE:** The descriptions in this chapter and throughout the rest of this manual assume that you are using a mouse. However, there are certain keys on the keyboard that you can use in place of the mouse. For details, see Chapter 2 in the *Using the Amiga Workbench* manual.

## Turning On Your Computer

**NOTE:** Before you turn on your computer, be sure that you have correctly installed and connected all the equipment in your system.

First, turn on the monitor and any other equipment attached to your Amiga. (See your equipment manuals for further information.)

Next, press the power switch located on the power supply. The power light on the right front of the computer will light up.





## Booting Your Computer

The process of starting a computer is often referred to as *booting* the computer. The Amiga 500 Series is normally booted from the built-in floppy disk drive. If you attach an A590 hard disk, the computer can be booted automatically from the hard disk.

### **Booting from the Floppy Disk Drive**

To boot the computer from the floppy drive, insert the Workbench or a bootable program disk in the internal floppy disk drive. In a short time, the *Workbench* screen or application program screen appears on your monitor. (For an introduction to the Workbench or for details on booting from a floppy disk, see Chapter 1 of the *Using the Amiga Workbench* manual.)

### **Booting from the Hard Disk Drive**

Your Amiga can also be set to automatically boot from an optional hard disk. Simply turn on the computer and the Workbench screen appears on your monitor. To boot from a floppy disk when a hard disk is installed, insert the Workbench or bootable disk in the drive before you turn the computer on.

## Workbench — The Amiga Graphical User Interface

An easy way for users to operate a computer is through a *Graphical User Interface (GUI)*, which is a pictorially oriented system. When working with a typical GUI, you use a *mouse* to move an arrow-shaped symbol called a *pointer* around the monitor screen. The pointer is used to select *icons*, which are small pictures that identify items such as files or functions.

In some cases the selection involves a *menu*, which is a list of options from which you can pick the item or function you want.

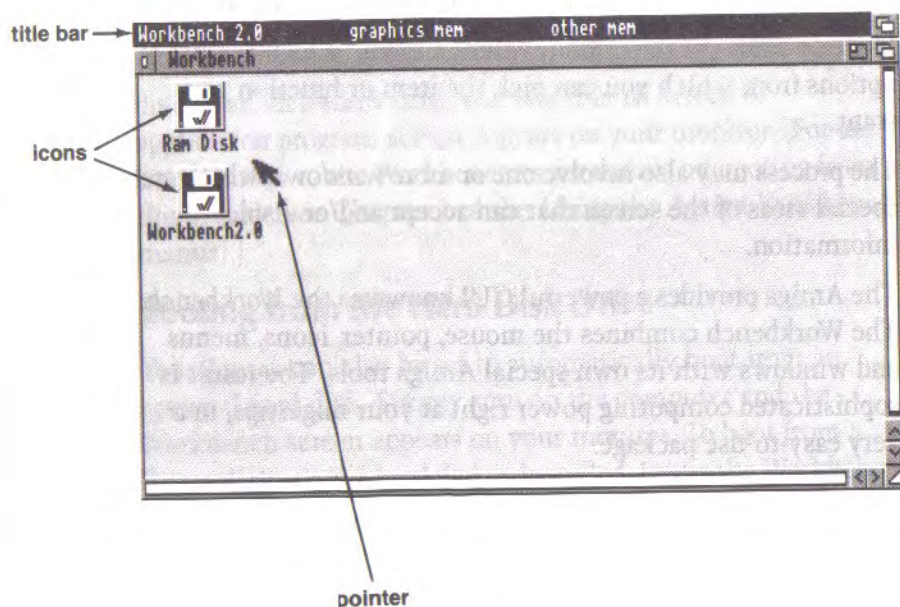
The process may also involve one or more *windows*, which are special areas of the screen that can accept and/or display information.

The Amiga provides a powerful GUI known as the *Workbench*. The Workbench combines the mouse, pointer, icons, menus and windows with its own special Amiga tools. The result is sophisticated computing power right at your fingertips, in a very easy-to-use package.



## The Workbench Screen

**NOTE:** This section provides a brief introduction to the Workbench screen. For complete information, including tutorials, on all elements of the Workbench, see Chapters 1 through 6 of the *Using the Amiga Workbench* manual.



Notice the *title bar* at the top of the screen. This identifies the screen as the *Workbench*. On the Workbench are several *icons* (small pictures or symbols). The icons on the screen represent the currently available storage devices (floppy disk, RAM disk, etc.). To learn all about these icons, see the *Using the Amiga Workbench* manual.

## Moving the Pointer and Selecting

The small arrow on the screen is known as the *pointer*. You use the mouse to move the pointer to select items on the screen.

If, while you are moving the mouse, you run out of desk space and your pointer still is not where you want it to be, just lift the mouse off the desk and put it down where there is room. Lifting the mouse does not move the pointer.

**NOTE:** The size and shape of the pointer, as well as the rate at which it moves, can be changed. See the *Using the Amiga Workbench* manual for details.

As noted previously, *icons* are used to represent various Amiga items, such as files, drawers and tools. When you want to use an icon, you must move the pointer to that icon and *select* it.

To perform the selection function, you use the *left* button on the mouse. For this reason, the left mouse button is known as the **selection** button.

As an example, use the mouse to move the pointer to the *Work* icon. Then click (press) twice on the **selection** (left) button. (This action is known as *double clicking*.) Be sure to press the button twice in rapid succession.

Notice that the *Work* icon is highlighted at the first press of the mouse button. This indicates that the icon has been selected. After the second press of the left button, the *Work* window will appear.

Sometimes when you double-click on an icon, the pointer changes shape and becomes a *Wait* pointer.





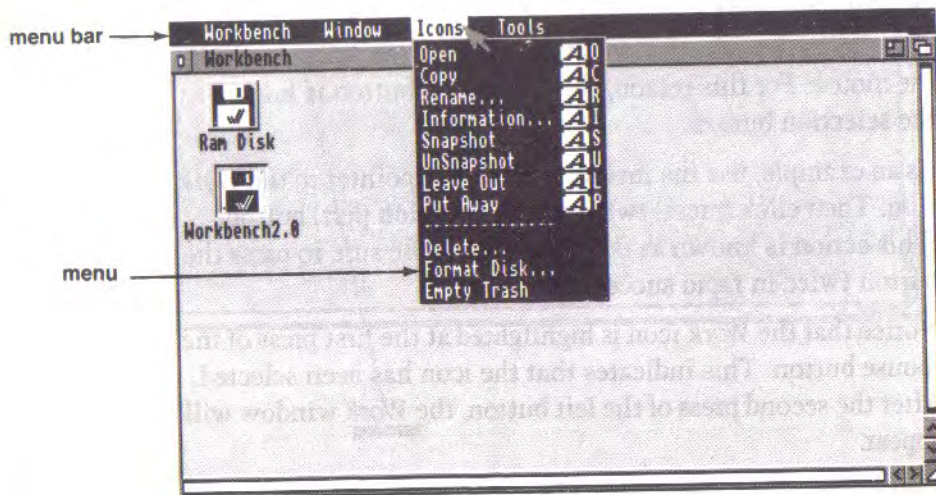
When you see this pointer, it means that the Workbench is busy doing what you asked it to do. When the pointer returns to its original shape, you can continue working.

If you decide you no longer want an icon selected, move the pointer to any location on the Workbench screen that is not occupied. Then click *once* on the **selection** (left) button.

## About Menus

*Menus* provide a list of the choices available to you. To make a choice from a menu, you use the *right* mouse button. For this reason, the right mouse button is known as the **menu** button.

Holding down the menu (right) button causes a **menu bar** to appear across the top of the screen. The menu bar shows the headings of any menus that are available to you.



**NOTE:** For full details on selecting icons and using menus, see the *Using the Amiga Workbench* manual.

## Additional Workbench Features

There are many special features available on the Amiga to ensure peak performance. For example, since the Amiga is a *multitasking* system, it is possible to open a number of windows and have a variety of programs running at the same time. This can put a premium on screen space. The Workbench therefore provides ways to manage the screen output and functions for optimum results.

You may have noticed the *gadgets* — the small symbols in the border and corner areas of windows. These *gadgets* allow you to customize the size, position, and other characteristics of windows shown on the Workbench screen.

For example, you can use gadgets to move windows by a process known as *dragging*. To drag a window, point to its title bar, hold down the selection button, and move the mouse. The window is repositioned at whatever point you release the selection button.

You can also position one window in front of or behind another, and you can scroll the contents of a window when the window holds too many items to be displayed at one time. The gadget in the upper left hand corner of each window is called the "close gadget." This gadget is used to close a window or program.

For detailed instructions on using all the Workbench features, including the gadgets, see the *Using the Amiga Workbench* manual.



## Loading Programs from a Floppy Disk

To use a program on your computer, the program must first be placed into memory. This is often referred to as *loading* the program.

The method you use to load programs from a floppy disk depends on the software you are using. In some cases the program disk contains not only the program itself, but also the files required to boot the computer and perhaps a routine that allows you to copy the program to a hard disk. To load a program properly, be sure to follow the loading instructions included with the software package you are using.

When you are loading a program from a floppy disk, the drive light on the right front of the computer will come on, indicating that the disk drive is active. **DO NOT ATTEMPT TO INSERT OR REMOVE A FLOPPY DISK WHILE THE DRIVE ACTIVITY LIGHT IS ON.** Once the program is loaded, follow the operating instructions supplied in the software documentation.

Refer to the *Using the Amiga Workbench* manual for detailed instructions on how to load and run programs.

## Saving Your Work

Most software has a specific procedure for saving your work. For exact instructions on saving your work, see the user's manual for the application software you are using.

## Turning Off Your Computer

When you finish a computing session and want to turn off the computer, first save any work that you want to keep. Next, remove any disks from the floppy drive. Then press the power switch on the power supply. The power light on the right front of the computer will go out. Turn off the monitor and any peripherals.

### **WARNING!**

- **DO NOT TURN OFF THE COMPUTER OR REMOVE A DISK FROM A DRIVE IF ITS FLOPPY DISK DRIVE ACTIVITY LIGHT IS ON.**
- **IF YOU HAVE A HARD DRIVE, WAIT AT LEAST 5 SECONDS AFTER THE HARD DISK ACTIVITY LIGHT GOES OUT BEFORE TURNING OFF YOUR COMPUTER.**

***IMPORTANT:*** *Turning off or rebooting the computer erases whatever is in the memory of the computer, so be sure to save your work before you use these procedures. See the Using the Amiga Workbench manual for details on saving and rebooting.*



## Using a Hard Disk

You can attach an optional hard disk to the A500 Series. A hard disk has a storage capacity equivalent to that of dozens of floppy disks. A hard disk allows faster storage and retrieval of information than a floppy disk.

Following is general information about using a hard disk. For specific instructions on hard disk use, see the *Using the Amiga Workbench* manual.

*Formatting* prepares the disk to receive data in a form compatible with the Amiga's operating system. If you install a hard disk, that disk must be formatted by you or your dealer.

### Copying Programs to the Hard Disk

You will want to install the Workbench, Extras and Fonts software as well as other programs to your hard disk. The documentation for many programs that you purchase will tell you how to do this. If a program lacks such documentation, see the *Using the Amiga Workbench* manual for copying instructions. The manual also gives complete instructions on how to perform all file handling procedures, such as moving a file, combining one file with another one, deleting a file, etc.

### Loading Programs from the Hard Disk

If the floppy disk for a program is not *copy-protected* (that is, if the originator has not made it impossible for a copy to be made using standard copying procedures), you can copy the program to your hard disk. You will then be able to load and run the program from the hard disk, much faster than you could do from a floppy disk.

## Saving/Retrieving Hard Disk Files

You can save files to and retrieve files from a hard disk as you would a floppy disk. See the *Using the Amiga Workbench* manual for instructions on how to save and retrieve hard disk files.

### Backing Up the Hard Disk

The information on a disk (hard or floppy) may be damaged or destroyed by a hardware or software failure. To ensure that you have a copy of your important programs and files, you should back up your floppy and hard disks. Since a hard disk can store large amounts of information, it is especially important that you back up a hard disk periodically.

Special software is included with your computer to allow you to back up the hard disk by copying the information stored on the hard disk to another storage medium like floppy disks or an optional streaming tape drive. See the *Using the Amiga Workbench* manual for information on hard disk backup procedures.

You should back up the hard drive frequently — daily or weekly, depending on how often the information is used and how important the information is. Without a backup copy, it will be impossible for you to replace any files lost through user error or system or hard disk failure.

**\*\*\* IMPORTANT \*\*\***

***For complete information on using the hard disk, including how to use the backup software, refer to the Using the Amiga Workbench manual.***



## Caring for Your Computer

Your Amiga needs very little care to keep it working at its best. Observe the following precautions to keep your Amiga in top shape.

- *Keep the Amiga dry.* Keep liquids away from the Amiga. An accidental spill can seriously damage disks or the Amiga itself.
- *Keep the Amiga out of temperature extremes.* Working temperature range is 0 to 45°C (32 to 113°F). Storage temperature range is 0 to 60°C (32 to 140°F). If the system experiences excessive heat or cold, the Amiga may not function reliably.
- *Keep connectors and the ends of cables clean.* Any substance that adheres to connectors or the ends of cables can prevent a good electrical connection or damage the connector.
- *Keep magnets away from the monitor, and all other components of the computer setup.* Although magnets won't damage the monitor, they can distort the video display and they can damage disks. In addition to more obvious magnets, beware of magnets in telephones, electronics equipment (especially loudspeakers), and electric motors.
- *Do not attempt to service your Amiga yourself.* If your Amiga needs service, take it to an authorized Amiga Service Center. Attempting to service the computer on your own will void the warranty on your Amiga.

## Cleaning the Mouse

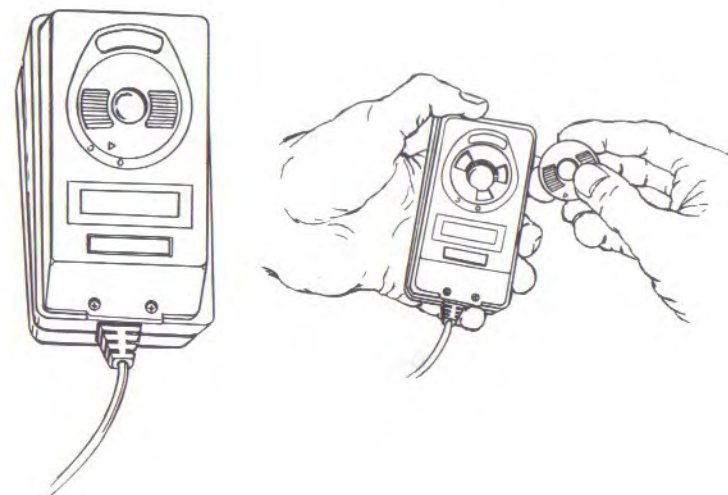
*Use the mouse on a clean surface.* The ball on the bottom of the mouse must be clean to work properly. If the mouse behaves erratically, it may need cleaning.

To clean the mouse, you will need:

- *a soft, dry, lint-free cloth*
- *alcohol, or head cleaning fluid for tape recorders*
- *cotton swabs*

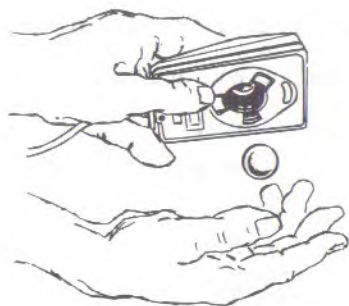
Here's how to clean the mouse:

- Turn the mouse upside down with its cable toward you. Hold the mouse in both hands and put your thumbs on the ridged panels on either side of the ball.
- With your thumbs, firmly turn the ball cover to the open position. With the mouse upside down, lift off the cover.





- Put your hand over the opening, turn the mouse right side up, and catch the ball.



- In the opening, you will see small rollers. Moisten a cotton swab with isopropyl alcohol or tape head cleaning fluid and gently swab the surface of each roller. Turn each roller as you swab to clean it all the way around.
- Use the cloth to wipe off the mouse ball. (Do not use any liquid when cleaning the mouse ball.) When you are done, blow gently into the opening to remove any dust, replace the ball, and replace the cover for the ball.



## Taking Care of Floppy Disks

To protect the information on your floppy disks, observe these precautions:

- *Make copies (working disks) of important disks.* Work with the copies and keep the originals in a safe place for use as backups if the copies become damaged. See the *Using the Amiga Workbench* manual for details on copying disks.
- *Never remove a disk from a drive when the drive light is on.* The disk drive light tells you that the Amiga is using a disk.
- *Don't touch the surface of the disk.* The metal shutter on a floppy disk closes automatically whenever you remove the disk from a disk drive. Do not touch the surface of the disk underneath the cover.
- *Keep disks away from magnets.* Disks store information magnetically. Magnets can ruin the information on a disk.
- *Keep disks away from extreme heat or cold.* Do not leave disks in direct sunlight, near heat sources, or in cars parked in the sun.

## Appendix A Technical Specifications

	A500 Model	A500 Plus Model
<b>CPU</b>	Motorola 68000, 16 Bit	Motorola 68000, 16 Bit
<b>Clock Speed</b>	7.16 NTSC; 7.09 PAL MHz	7.16 NTSC; 7.09 PAL MHz
<b>Coprocessors</b>	Multi-chip coprocessor system for DMA video, graphics and sound	Multi-chip coprocessor system for DMA, video, graphics and sound
<b>Memory</b>	512 KB RAM standard; expandable with optional A501 to 1 MB RAM internally; maximum RAM expansion is 9 MB.	1 MB RAM standard; expandable with optional A501 Plus to 2 MB RAM internally; maximum RAM expansion is 10 MB.
<b>ROM</b>	512 KB	512 KB
<b>Interfaces</b>	<i>External:</i> Keyboard Floppy Disk Mouse/Joystick (2) Serial (RS232, PC-compatible) Parallel (Centronics, PC-compatible) Video (DB23 15 KHz: RGB analog) Stereo Audio	<i>External:</i> Keyboard Floppy Disk Mouse/Joystick (2) Serial (RS232, PC-compatible) Parallel (Centronics, PC-compatible) Video (DB23 15 KHz: RGB analog) Stereo Audio
<b>Power Supply</b>	Switching, 37.5 watts	Switching, 37.5 watts



	A500 Model	A500 Plus Model
<b>Keyboard</b>	Integral, 94 keys U.S./ASCII, 96 keys International	Integral, 94 keys U.S./ASCII, 96 keys International
<b>Disk Drive(s)</b>	Standard: built-in 3.5- inch floppy drive (capacity: 880 KB formatted)	Standard: built-in 3.5- inch floppy drive (capacity: 880 KB formatted)
<b>External Disk Drives</b>	One optional Amiga- compatible floppy disk drive	One optional Amiga- compatible floppy disk drive
<b>Video Display</b>	Complies with: North America: RGB NTSC International: RGB PAL 4096 Colors	Complies with: North America: RGB NTSC International: RGB PAL 4096 Colors
<b>Environmental Specification</b>	Operating: 0-45°C (32 to 113°F) Storage/Shipping: 0-60°C (32 to 140°F)	Operating: 0-45°C (32 to 113°F) Storage/Shipping: 0-60°C (32 to 140°F)
<b>Sound</b>	4 independent sound channels configured as two stereo channels	4 independent sound channels configured as two stereo channels
<b>Text-to-speech conversion</b>	Built-in	Built-in
<b>Clock/ Calendar</b>	Optional with battery back-up; included with a 501 RAM expansion card	Built-in with battery backup
<b>System Software</b>	Multitasking; includes AmigaDOS, Workbench, and various utilities	Multitasking; includes AmigaDOS, Workbench, and various utilities

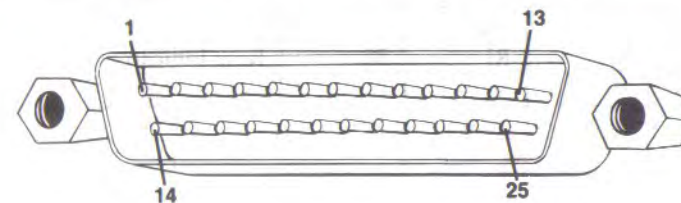
## Appendix B Input/Output Connector Pin Assignments

This section lists pin assignments for input/output connectors on the Amiga. The information in this section is highly technical and is intended only for those expert in connecting external devices to computers. You do not need this information if you use a cable specifically designed for the Amiga and the peripheral you want to connect.

*If you attach peripherals with cables other than those designed for use with your Amiga, note: some pins on Amiga connectors provide power outputs and non-standard signals. Attempting to use cables not wired specifically for the Amiga may cause damage to the Amiga or to the equipment you connect.* The descriptions that follow include specific warnings for each connector. For more information about connecting peripherals, consult your Amiga dealer.

In the descriptions that follow, a horizontal line over the signal name indicates a signal that is *active low* (e.g., STROBE).

### Serial Connector—DB25 Male (SERIAL PORT)

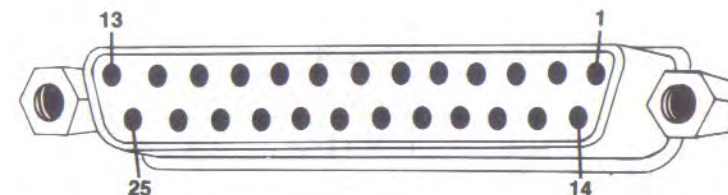


In the following table, the second column from the left gives the Amiga pin assignments. The third and fourth columns from the left give pin assignments for other commonly used connections; the information in these two columns is given for comparison only.

**WARNING: Pins 9 and 10 on the Amiga serial connector are used for external power. Connect these pins ONLY if power from them is required by the external device.** The table lists the power provided by each of these pins.

Pin	Amiga	RS232	HAYES®	Description
1	SHIELD	GND	GND	Shield Ground
2	TXD	TXD	TXD	Transmit Data
3	RXD	RXD	RXD	Receive Data
4	RTS	RTS		Request to Send
5	CTS	CTS	CTS	Clear to Send
6	DSR	DSR	DSR	Data Set Ready
7	GND	GND	GND	System Ground
8	DCD	DCD	DCD	Carrier Detect
9	+12V			+ 12 Volts DC
10	-12V			- 12 Volt DC
11	AUDO			Audio out of Amiga
12		S.SD	SI	Speed Indicate
13		S.CTS		
14		S.TXD		
15		TXC		
16		S.RXD		
17		RXC		
18	AUDI			Audio into Amiga
19		S.RTS		
20	DTR	DTR	DTR	Data Terminal Ready
21		SQD		
22	RI	RI	RI	Ring Indicator
23		SS		
24		TXC1		
25				

### Parallel Connector-DB25 Female (PARALLEL PORT)

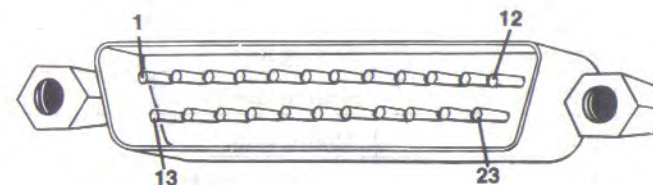


**WARNING: Pin 14 on the Amiga parallel connector supplies +5 volts of power. Connect this pin ONLY if the power from it is required by the external device. NEVER connect this pin to an output of an external device or to a signal ground. Pins 17-25 are for grounding signals. DO NOT connect these pins directly to a shield ground.**



Pin	Name	Description
1	$\overline{\text{STROBE}}$	Strobe
2	D0	Data Bit 0 (LSB)
3	D1	Data Bit 1
4	D2	Data Bit 2
5	D3	Data Bit 3
6	D4	Data Bit 4
7	D5	Data Bit 5
8	D6	Data Bit 6
9	D7	Data Bit 7 (MSB)
10	$\overline{\text{ACK}}$	Acknowledge
11	BUSY	Busy
12	POUT	Paper Out
13	SEL	Select
14	+ 5V PULLUP	+ 5 Volts DC (10 mA)
15		Not Used
16	$\overline{\text{RESET}}$	Reset
17	GND	Signal Ground
18	GND	Signal Ground
19	GND	Signal Ground
20	GND	Signal Ground
21	GND	Signal Ground
22	GND	Signal Ground
23	GND	Signal Ground
24	GND	Signal Ground
25	GND	Signal Ground

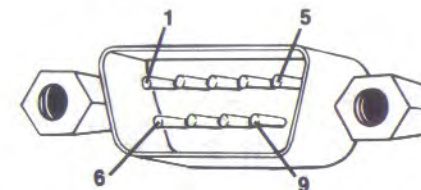
### RGB Monitor Connector-DB23 Male (RGB VIDEO PORT)



**WARNING:** Pins 21, 22 and 23 on the RGB monitor connector are used for external power. Connect these pins **ONLY** if power from them is required by the external device. The following table lists the power provided by each of these pins.

Pin	Name	Description
1	$\overline{\text{XCLK}}$	External Clock
2	$\overline{\text{XCLKEN}}$	External Clock Enable
3	RED	Analog Red
4	GREEN	Analog Green
5	BLUE	Analog Blue
6	DI	Digital Intensity (47 Ohm)
7	DB	Digital Blue (47 Ohm)
8	DG	Digital Green (47 Ohm)
9	DR	Digital Red (47 Ohm)
10	$\overline{\text{CSYNC}}$	Composite Sync
11	$\overline{\text{HSYNC}}$	Horizontal Sync (47 Ohm)
12	$\overline{\text{VSYNC}}$	Vertical Sync (47 Ohm)
13	GNDRTN	Return for $\overline{\text{XCLKEN}}$
14	$\overline{\text{ZD}}$	Zero Detect (47 Ohm)
15	$\overline{\text{CI}}$	Clock Out
16	GND	Ground
17	GND	Ground
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	-12V	-5 Volts DC (50 mA)
22	+12V	+12 Volts DC (100 mA)
23	+5V	+5 Volts DC (100 mA)

## Mouse/Game Controller Connectors—DB9 Male (JOYSTICK PORTS)



If you use a mouse to control the Workbench, you must attach it to Joystick 1 (the connector on the rear of the Amiga). You can attach joystick controllers and light pens to either of the connectors. The following tables describe mouse, game controller, and light pen connections.

**WARNING:** Pin 7 on each of these connectors supplies +5 volts of power. Connect this pin **ONLY** if power from it is required by the external device.

### Joystick 1: Mouse

Pin	Name	Description
1	MOUSE V	Mouse Vertical
2	MOUSE H	Mouse Horizontal
3	MOUSE VQ	Vertical Quadrature
4	MOUSE HQ	Horizontal Quadrature
5	MOUSE BUTTON 2	Mouse Button 2
6	MOUSE BUTTON 1	Mouse Button 1
7	+5V	+5 Volts DC (100 mA)
8	GND	Ground
9	MOUSE BUTTON 3	Mouse Button 3



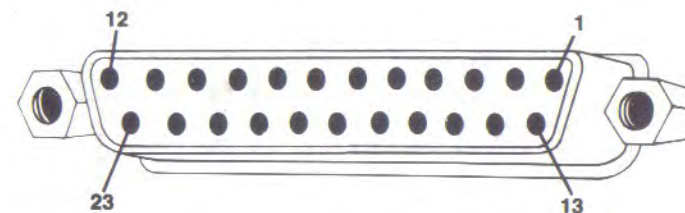
### Joysticks 1 and 2: Game Controller

Pin	Name	Description
1	$\overline{\text{FORWARD}}$	Controller Forward
2	$\overline{\text{BACK}}$	Controller Back
3	$\overline{\text{LEFT}}$	Controller Left
4	$\overline{\text{RIGHT}}$	Controller Right
5	POT X	Horizontal Potentiometer
6	$\overline{\text{FIRE}}$	Controller Fire
7	+5V	+ 5 Volts DC (100 mA)
8	GND	Ground
9	POT Y	Vertical Potentiometer

### Joystick 2: Light Pen

Pin	Name	Description
1		Not Used
2		Not Used
3		Not Used
4		Not Used
5	LIGHT PEN PRESS	Light Pen Switch
6	$\overline{\text{LIGHT PEN}}$	Capture Beam Position
7	+5V	+ 5 Volts DC (100 mA)
8	GND	Ground
9		Not Used

### External Disk Connector—DB23 Female (FLOPPY DISK DRIVE PORT)



Pin	Name	Description
1	$\overline{\text{RDY}}$	Disk Ready
2	DKRD	Disk Ready Data
3-7	GND	Ground
8	$\overline{\text{MTRXD}}$	Disk Motor Control
9	$\overline{\text{SEL3B}}$	Select Drive 3
10	$\overline{\text{DRESB}}$	Disk Reset
11	$\overline{\text{CHNG}}$	Disk Has Been Removed From Drive— Latched Low
12	+5V	+ 5 Volts DC
13	$\overline{\text{SIDEB}}$	Select Disk Side—0 = Upper, 1 = Lower
14	$\overline{\text{WPRO}}$	Disk Is Write Protected
15	$\overline{\text{TK0}}$	Drive Head Position Over Track 0
16	$\overline{\text{DKWE}}$	Disk Write Enable
17	$\overline{\text{DKWD}}$	Disk Write Data
18	$\overline{\text{STEPB}}$	Step The Head—Pulse, First Low, Then High
19	DIRB	Select Head Direction— 0 = Inner, 1 = Outer
20	$\overline{\text{SEL1B}}$	Select Drive 1
21	$\overline{\text{SEL2B}}$	Select Drive 2
22	$\overline{\text{INDEX}}$	Disk Index Pulse
23	+12V	+ 12 Volts DC

## 86-Pin Connector

Pin	Name	Pin	Name
1	GND	44	$\overline{\text{IPL2}}$
2	GND	45	A16
3	GND	46	BERR
4	GND	47	A17
5	+5	48	$\overline{\text{VPA}}$
6	+5	49	GND
7	NC	50	E
8	-12	51	$\overline{\text{VMA}}$
9	NC	52	A18
10	+12	53	$\overline{\text{RST}}$
11	NC	54	A19
12	$\overline{\text{CONFIG}}$	55	$\overline{\text{HLT}}$
13	GND	56	A20
14	$\overline{\text{C3}}$	57	A22
15	CDAC	58	A21
16	$\overline{\text{CI}}$	59	A23
17	$\overline{\text{OVR}}$	60	$\overline{\text{BR}}$
18	XRDY	61	GND
19	$\overline{\text{INT2}}$	62	$\overline{\text{BGACK}}$
20	NC	63	D15
21	A5	64	$\overline{\text{BG}}$
22	$\overline{\text{INT6}}$	65	D14
23	A6	66	$\overline{\text{DTACK}}$
24	A4	67	D13
25	GND	68	$\overline{\text{RW}}$
26	A3	69	D12
27	A2	70	LDS
28	A7	71	D11
29	A1	72	$\overline{\text{UDS}}$
30	A8	73	GND
31	FC0	74	$\overline{\text{AS}}$
32	A9	75	D0
33	FC1	76	D10
34	A10	77	D1
35	FC2	78	D9
36	A11	79	D2
37	GND	80	D8
38	A12	81	D3
39	A13	82	D7
40	$\overline{\text{IPL0}}$	83	D4
41	A14	84	D6
42	$\overline{\text{IPL1}}$	85	GND
43	A15	86	D5

## Appendix C

## The A500 Series Keyboard

Your Amiga keyboard is divided into four sections:

- The Main Keyboard
- The Cursor Keypad plus Del and Help keys
- The Numeric Keypad
- The Function Keys

The general keyboard is illustrated on the following page.

When using the keyboard, keep the following points in mind:

- Keys can be program-controlled—that is, their use can be defined by the software being used (e.g., an application program, such as a word processor or spreadsheet). For specific information on the program control of keys, refer to the manual for the particular software package you are using.
- The keys on the keyboard usually repeat for as long as they are held down.
- You cannot interchange the numeral 0 and the upper case letter O, or the numeral 1 and the lower case letter l.
- In some cases several keys may be used together, either simultaneously or in a special sequence.

You can use the keyboard as well as the mouse to move around the screen and select icons, gadgets, etc. In many programs you use the keyboard to enter information. You can use the keys to tell the computer what you want it to do, and to reply to messages or questions the computer displays on the screen, these messages and questions are sometimes called "system requesters" or simply "requesters."



STANDARD U.S. KEYBOARD (usa)



**NOTE:** As shown below, the international keyboards have two additional keys on the main keyboard, located near the Shift key positions. The specific characters associated with these keys depend on the national keymap in use. See *Using the Amiga Workbench* for details on keymaps. Note that for the British keyboard these additional keys are not used.

GERMAN KEYBOARD (d)



## The Main Keyboard Area

The **main keyboard area** (see keyboard illustration) provides a standard alphanumeric typewriter keyboard plus additional keys with special uses and capabilities. The special keys include:

### Esc



The Esc (Escape) key, located at the top left of the keyboard, is a program-controlled key, often used to expedite leaving or entering a program or a program function.

### Tab



The Tab key, located two rows below the Esc key, can be program-controlled to perform tab functions. The Tab key is used extensively in word processing and desktop publishing programs.

### Ctrl



The Ctrl (Control) key, located just below the Tab key, is a program-controlled key that is often used with other keys to perform special functions. The Ctrl key modifies other keys in a way similar to the way that the Shift key does.

### Caps Lock



The Caps Lock key is located next to the Ctrl key. When the Caps Lock key is active a light on that key is illuminated. The alphabetic characters (A through Z) will produce upper case letters as long as the light is on. However, the upper characters on the numeric row at the top of the main keyboard area (!, ", # through /) are not affected by the Caps Lock key. To type these characters, you must hold down one of the Shift keys and press the key for the desired character. To release the Caps Lock key, press it again so that its light goes out.

### Shift Keys



There are two Shift keys, marked with an upward arrow (⇧) and located on either side of the bottom row of letters (z, x, c, etc.). These keys can perform the same function as the shift keys on a standard typewriter—that is, depressing either Shift key simultaneously with any alphabetic key or with any key on the top row of the main keyboard area causes the upper character on that key to be displayed. In addition, the Shift keys are often used with other keys to perform special functions.



## Alt Keys

There are two Alt (Alternate) keys, located at the extreme left and right sides of the bottom row of the keyboard. These keys are also often used with other keys to perform special functions. This key may modify other keys in a way similar to the way the Shift key does.

### A

This key, known as the left Amiga key, is located on the bottom row of the keyboard, just to the left of the space bar. The left Amiga key is also used with other keys to perform special functions. This key may modify other keys in a way similar to the way the Shift key does.

### A

This key, known as the right Amiga key, is located on the bottom row of the keyboard, just to the right of the space bar. The right Amiga key is also used with other keys to perform special functions. This key may modify other keys in a way similar to the way the Shift key does.

**NOTE: Simultaneously depressing the Ctrl key and the left and right Amiga keys resets your computer. See Chapter 1 in the *Using the Amiga Workbench* manual for details.**

## Enter

The Enter key is located on the right side of the main keyboard area, in the middle two rows. You use this key to transmit a command or information to the computer. In manuals, you may see this key referred to by the symbol "↵" or the word "Return".

## Backspace

The Backspace key is the key farthest right on the top row of the main keyboard area. Pressing the Backspace key deletes any characters to the left of the cursor and causes the cursor, and any characters to the right of it, to move to the left.

## Del and Help Keys

To the left of the main keyboard area are the Del and Help keys.

### Del

The Del (Delete) key is located just to the right of the top row of the main keyboard area. Pressing the Del key deletes the character at the cursor position. Any characters to the right of the cursor move to the left.

### Help

The Help key, located to the right of the Del key, is a program-controlled key that programs can use as an option to provide additional information or user assistance.

## The Cursor Keypad

The four cursor keys are grouped in a small keypad located on the bottom right side of the keyboard, between the **main keyboard area** and the **numeric keypad**. These keys control the movement of the cursor (up, down, left, right) on the screen display. The direction in which each key moves the cursor is indicated by the direction of the arrow displayed on the top of the individual key. These keys may also have special functions, depending on the software application.



## The Numeric Keypad

The Numeric Keypad is located to the far right of the keyboard. The keys are arranged in a calculator layout to facilitate numeric data entry. The numeric and arithmetic symbol keys on the keypad act just like the numeric and arithmetic symbol keys in the main keyboard area of the keyboard. You use the Enter key on the numeric keypad just as you use the Return key on the main keyboard—that is, to transmit data and commands to the computer.

## The Function Keys

The Function Keys, located at the top of the keyboard and numbered F1 through F10, are program-controlled keys.

## Using the Amiga Without a Mouse

On the Amiga, the keyboard can generally perform the same actions as the mouse. See Chapter 2 in the *Using the Amiga Workbench* manual for details on using the Amiga without a mouse.

## Appendix D Setup Information for the Commodore-Amiga 500 Series

### Before You Start . . .

#### CAUTION

- **BEFORE YOU ATTEMPT TO SET UP THE COMPUTER OR CONNECT ANYTHING TO IT, MAKE SURE THAT THE POWER SWITCHES OF ALL UNITS ARE TURNED OFF AND THAT THE POWER CABLES ARE NOT CONNECTED TO ELECTRICAL OUTLETS.**
- When connecting cables to the Amiga, make sure you are plugging the correct cable into the proper connector. *Do not try to force a cable into a connector.*
- If you have a problem, always *check the instructions, especially any illustrations!*
- See the *A500 Series Quick Connect* for a pictorial guide to setting up your computer.

## Choosing a Location for Your Computer

When you set up your computer equipment, pick a location away from heat, dust, smoke, vibration or electrical interference.

### About Electrical Requirements

If possible, plug your Amiga equipment into a separate circuit to avoid electrical problems like power line interference and voltage surges or drops, which may occur if the circuit is shared with devices such as air conditioners, fans, vacuum cleaners, etc. These problems can cause damage to your computer.

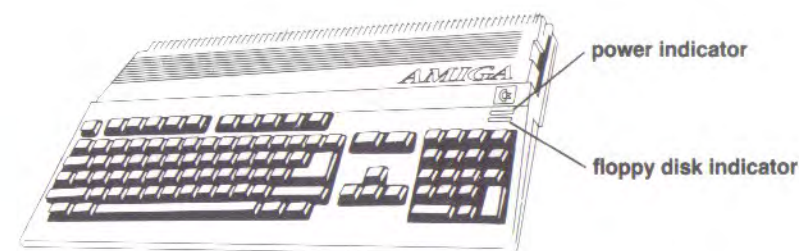
*Commodore-Amiga strongly recommends the use of a multi-outlet electrical power strip with surge protection. (These units are available from most computer, hardware and appliance stores.) This strip will help protect your system from electrical problems. It will also allow you to conveniently connect all the electrical plugs from your system components in one place. You can then turn everything on or off with a single on/off switch.*

**CAUTION: BE SURE THAT YOUR COMPUTER AND ANY PERIPHERAL EQUIPMENT MATCH THE ELECTRICAL REQUIREMENTS FOR THE COUNTRY IN WHICH YOU ARE USING THE COMPUTER. FOR EXAMPLE, YOU CANNOT USE A 110/120 VOLT MODEL IN COUNTRIES HAVING 220/240 VOLT SYSTEMS. IF IN DOUBT ABOUT ELECTRICAL HOOKUP REQUIREMENTS, CONSULT YOUR DEALER.**

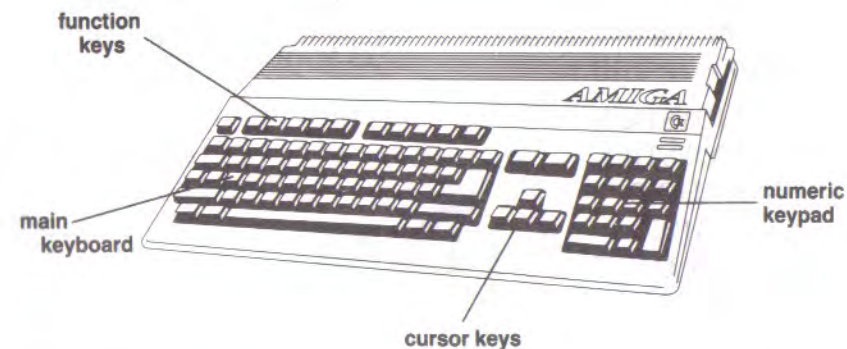
## Location of Ports, Connectors and Indicator Lights

### Top of Your Amiga

There are two indicator lights at the TOP RIGHT of the Amiga: a POWER indicator light and the FLOPPY DISK indicator light.



The keyboard is built into the top of your Amiga:

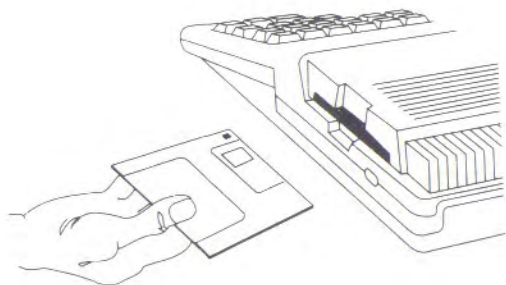


For details on using the keyboard, see Appendix C in this manual and the *Using the Amiga Workbench* manual.



## Right Side of Your Amiga

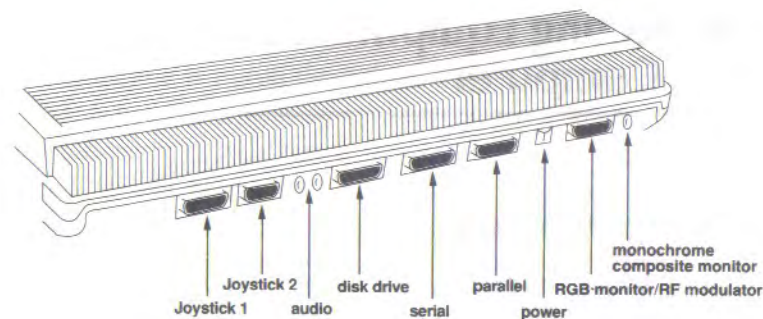
The **RIGHT SIDE** of the Amiga contains the 3.5 inch floppy disk drive:



## Rear of Your Amiga

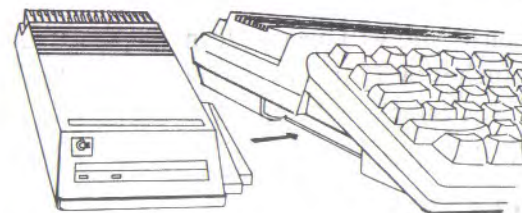
The **REAR** of the Amiga includes a variety of connectors and ports where you attach cables connecting other devices to the Amiga. As you face the rear of the computer, from left to right these ports are marked:

- 1 JOYSTICK
- 2 JOYSTICK
- R AUDIO
- L AUDIO
- DISK DRIVE
- SERIAL
- PARALLEL
- POWER
- RGB VIDEO
- MONO



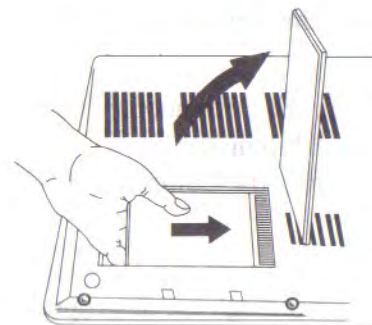
## Left Side of Your Amiga

The **LEFT SIDE** of the Amiga contains an expansion connector for adding an optional hard disk drive:



## Bottom of Your Amiga

The **BOTTOM** of your Amiga contains an expansion slot for adding an optional RAM expansion/clock cartridge:





## Connecting Equipment to Your Computer

---

### Attaching the Mouse

Before attaching the mouse, make sure you turn the mouse upside down and pull out the piece of foam that holds the mouse ball in place. If you don't get all the foam out, see *Cleaning the Mouse* on page 3-20 of this manual to find out how to uncover and clean the mouse ball.

To attach the mouse, plug the end of the mouse cable into the connector marked 1 JOYSTICK. The connector fits tightly; this helps keep the plug in place. Press firmly but *do not force*.

To use the mouse, you will need a clean, flat space that is at least 12 inches by 12 inches (30 centimeters by 30 centimeters). You can place the mouse to the right or left of the keyboard, depending on whether you're right or left-handed.

### Connecting a Monitor

Some sort of viewing device will be required for your system. Generally, a video monitor is recommended for this purpose. Depending on the country of purchase, the monitor may be included or may be optional equipment.

### Kinds of Monitors You Can Use

The monitor used with the Amiga can be one of a number of types, including:

- Analog RGB (e.g., the Commodore 1084/1084S)
- Composite Monochrome
- Multifrequency (e.g., the Commodore 1950 Multiscan)
- Digital RGBI

You can also connect your Amiga to a television set, VCR or composite color monitor through use of an optional RF adapter.

### Attaching a Video Monitor

The connection between the Amiga and the monitor depends on what type of monitor you are using (see monitor list above). If you are using an RGB monitor, you will need a cable with a 23-pin D female connector on one end. This connector is inserted into the monitor output socket marked RGB VIDEO on the rear of the Amiga. Fasten down the 23-pin D female connector with two screws. Plug the other end of the video cable into the connector on the back of the RGB monitor.

If you are using a composite monochrome monitor, you connect the monitor to the RCA type jack marked MONO, located on the rear of the computer, next to the RGB VIDEO connector.

If you are using a multifrequency monitor like the Commodore 1950 Multiscan, you will need to attach a 23-pin female adapter to the 15-pin connector on the end of the monitor input cable. Insert the 23-pin female adapter into the VIDEO connector on the back of the computer. Fasten down the connector with two screws. The other end of the video cable must be connected to the monitor.

For other monitors, follow the instructions given in your monitor manual. If you have a problem, see your Amiga dealer for the correct cable and instructions.

### Audio Connections for Monitors

There are left and right audio connectors on the back of the computer for connecting the audio output to a monitor or to audio equipment.

If you have an Amiga stereo monitor, the monitor should come with a set of stereo cables, for the left and right audio channels. To connect the Amiga sound to the monitor, insert one end of the cables into the right and left audio outputs on the back of the Amiga. Then insert the other ends into the corresponding audio inputs of the monitor.



If your monitor has only a monophonic speaker, you can convert the two stereo channels from the Amiga to a single channel that can be plugged into any monophonic monitor's audio input by using an optional cable called a "Y" adapter. This adapter can be purchased at electronics stores and in the electronics or hardware departments of many large consumer stores.

Just insert the two phono plugs at one end of the "Y" adapter into the two audio outputs on the back of the Amiga. Then insert the single plug at the other end of the "Y" into the monitor's audio input jack.

### Connecting the Amiga to a Stereo System

If your stereo system has a set of RCA™-type audio input connectors (labeled Auxiliary, Aux, CD, Tape, VCR Audio, TV/Aux, etc.), you can use these connectors to attach a set of RCA-type audio output cables from the Amiga. You can obtain these cables in electronics stores and in the electronics or hardware departments of many large consumer chains.

To connect the Amiga to your stereo system, insert the cables into the Amiga's right and left audio output connectors. Then insert the other ends of the cables into the corresponding audio input jacks of the stereo system.

If you have a non-standard (i.e., non-RCA) type of connector on your stereo equipment, there is probably an adapter that will enable you to make the audio connection. See your dealer for information.

### Installing Optional Equipment

**CAUTION: BEFORE CONNECTING ANYTHING (FLOPPY DISK DRIVES, HARD DISK, ETC.) TO THE AMIGA 500 SERIES, YOU MUST FIRST TURN OFF ALL POWER.**

**IMPORTANT: When you are adding an item to the computer, be sure to follow the specific instructions supplied with that item and/or consult your dealer.**

### Attaching a Parallel Device

You connect a **parallel** (Centronics compatible) device (e.g., a printer) through the connector marked PARALLEL PORT (a 25-pin female D connector) on the rear of your Amiga.

### Attaching a Serial Device

You connect a **serial** (RS232C) device (e.g., a printer or modem) through the connector marked SERIAL PORT (a 25-pin male D connector) on the rear of the computer.

**NOTE: You can connect a variety of serial devices (e.g., serial printer, a modem, MIDI adapter) to the serial port. However, only one device can be connected at a time.**

### Adding a Floppy Disk Drive Externally

You can add external 3.5 and/or 5.25 inch floppy drives through the DISK DRIVE connector on the rear of the computer.

### Adding a Hard Disk Drive Externally

You can add an optional external hard drive through the expansion connector on the left side of the computer.



## Connecting the Power Supply

The power supply has two cables permanently attached to it. One cable has a special square connector at the end; this connector plugs into the rear of the computer. The other cable has a power connector that plugs into an electrical receptacle; the design of this connector will match the electrical requirements for the country in which you are using the computer.

Insert the cable with the square connector into the square connector marked POWER on the rear of the computer.

Insert the other cable into a grounded electrical outlet.

**NOTE: The Amiga On/Off switch is located on the power supply. Make sure this On/Off switch is OFF before making any connections.**

## Turning On Your System

### Turning on the Monitor and Other Equipment

Included with most monitors and peripheral equipment (like printers) is a power cable. These cables may be permanently attached to the equipment, or they may be free cables—that is, cables that are entirely separate from the equipment.

**NOTE: Different countries may use different cable designs. Remember that your computer and any peripheral equipment must match the electrical requirements of the country in which you are using the computer. If in doubt about electrical connection requirements, consult your dealer.**

If you have not already attached the power cords to your monitor and peripheral equipment, do it now. Then turn on the monitor and peripheral equipment.

### Turning on the Computer

Press the ON/OFF switch on the power supply to turn on your computer. You should now be ready to start using your system.

#### CAUTION

**ALWAYS USE THE ON/OFF SWITCH ON THE POWER SUPPLY TO TURN OFF THE COMPUTER. NEVER TURN OFF THE COMPUTER BY PULLING THE CORD FROM THE ELECTRICAL RECEPTACLE. DOING SO COULD DAMAGE THE POWER SUPPLY.**

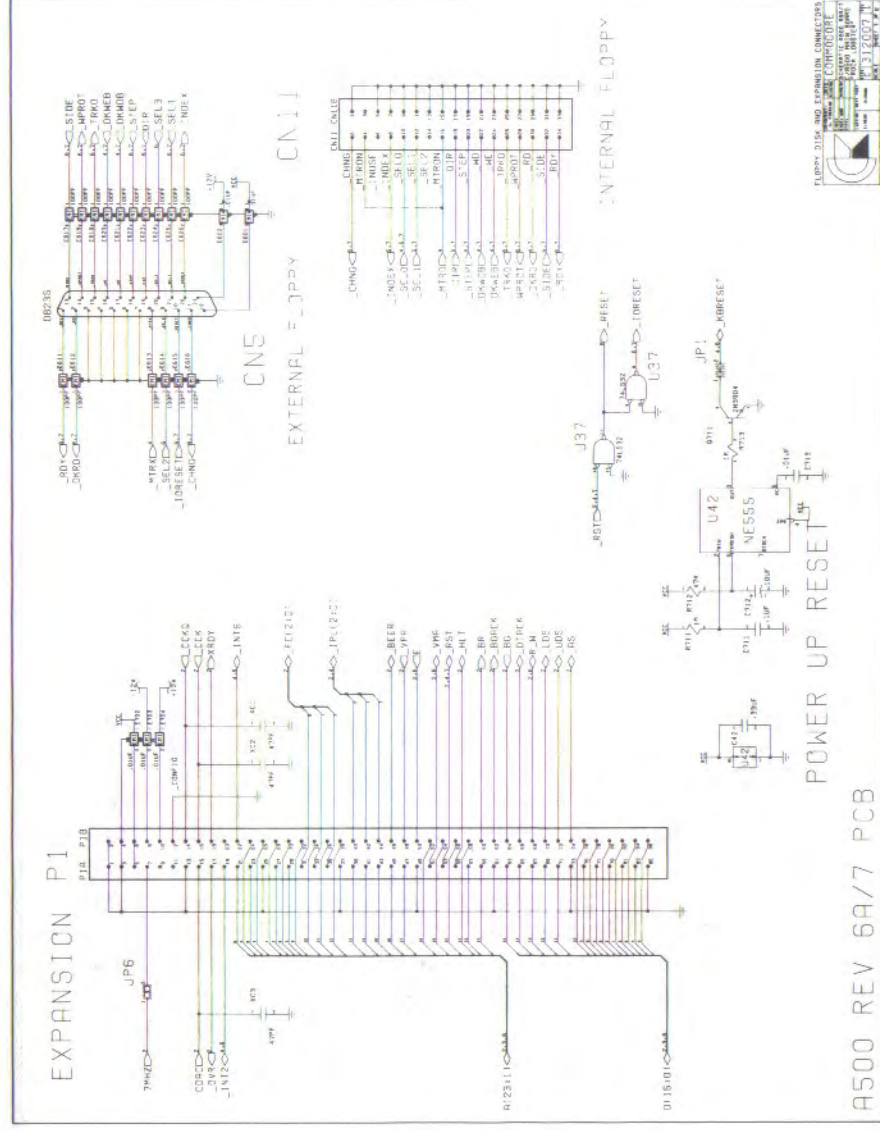
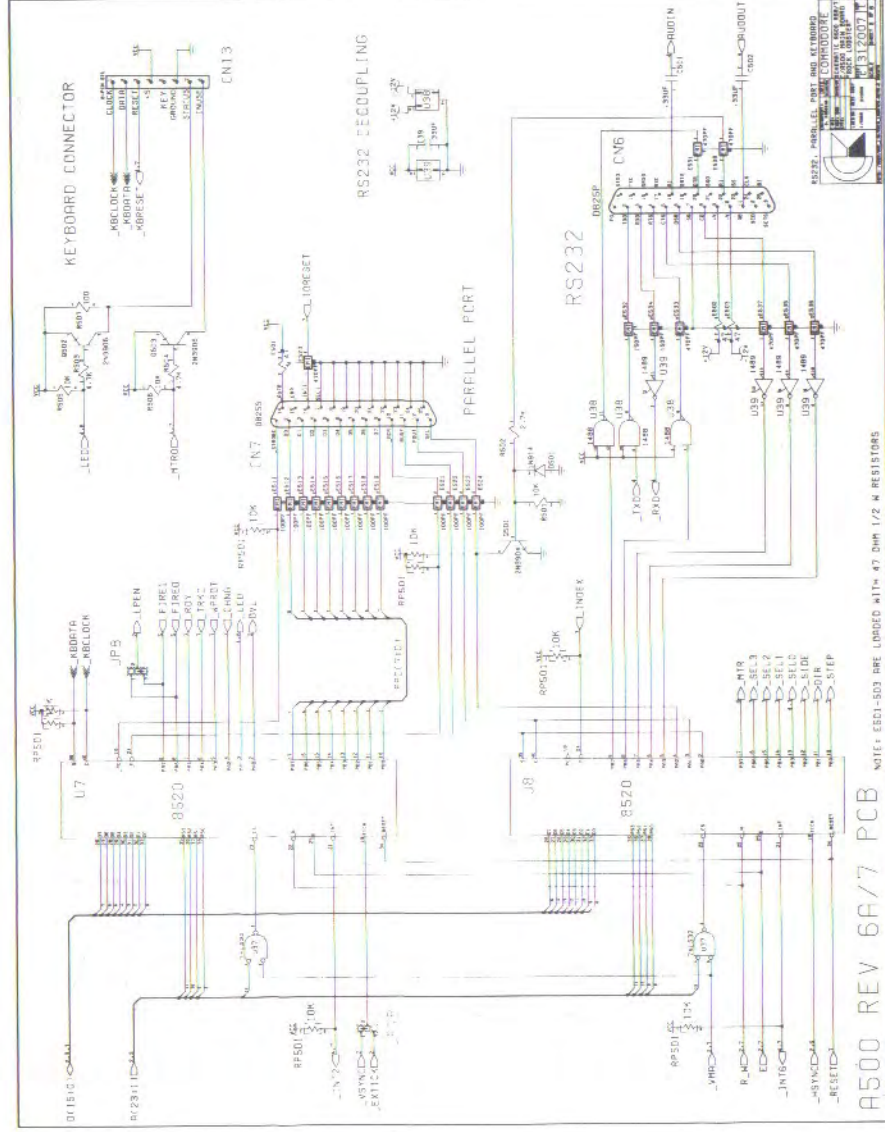






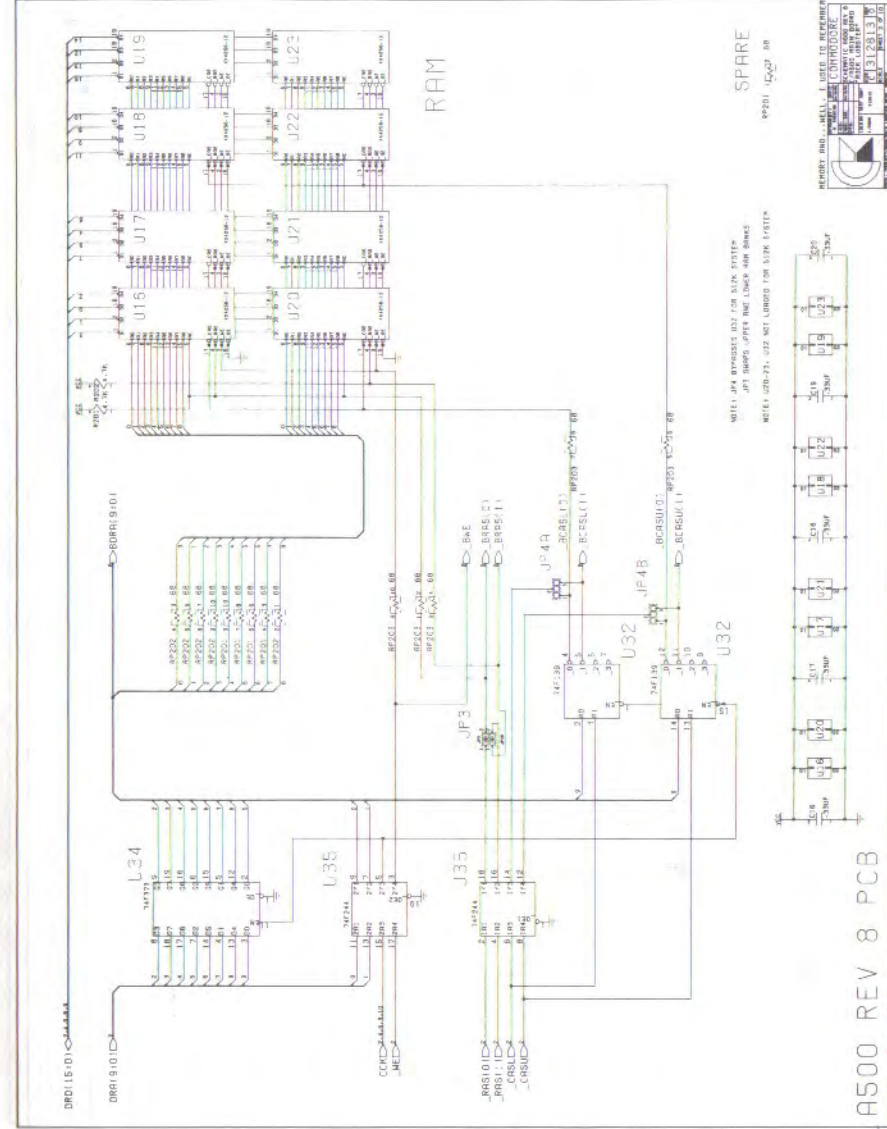
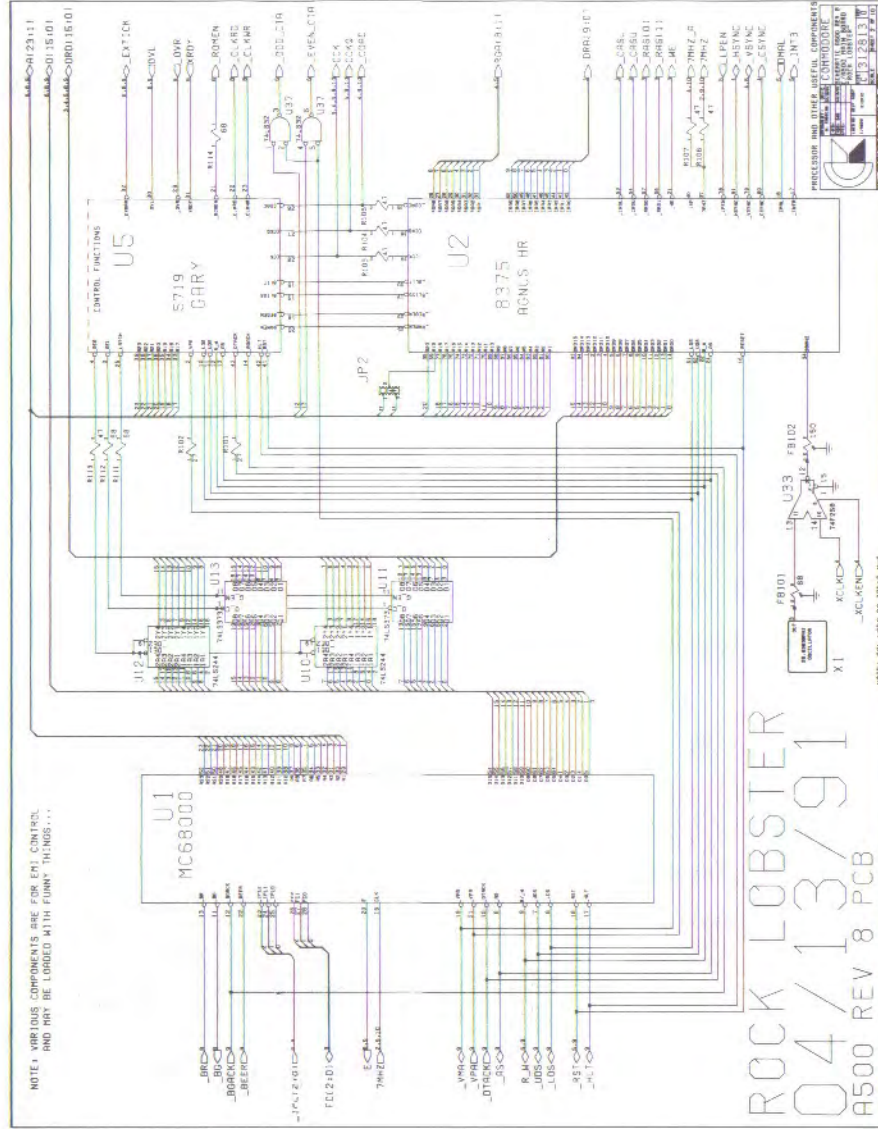




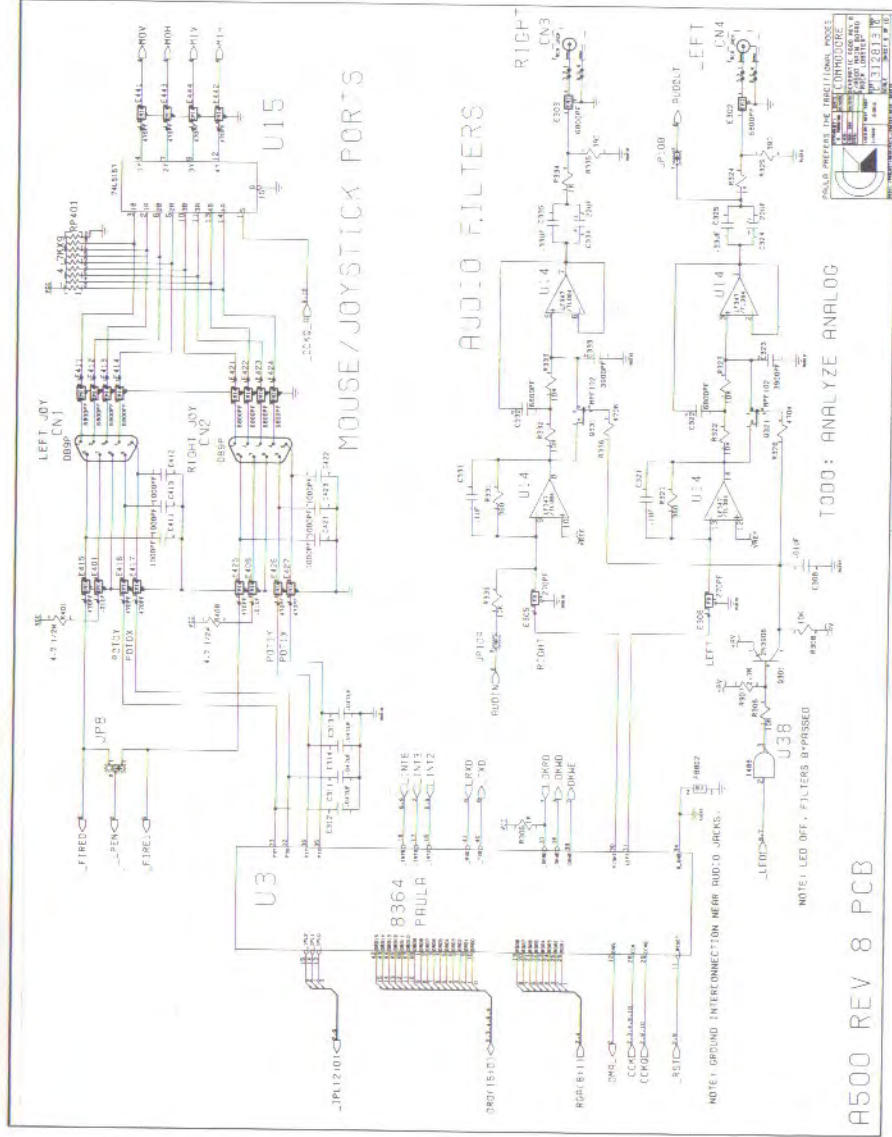
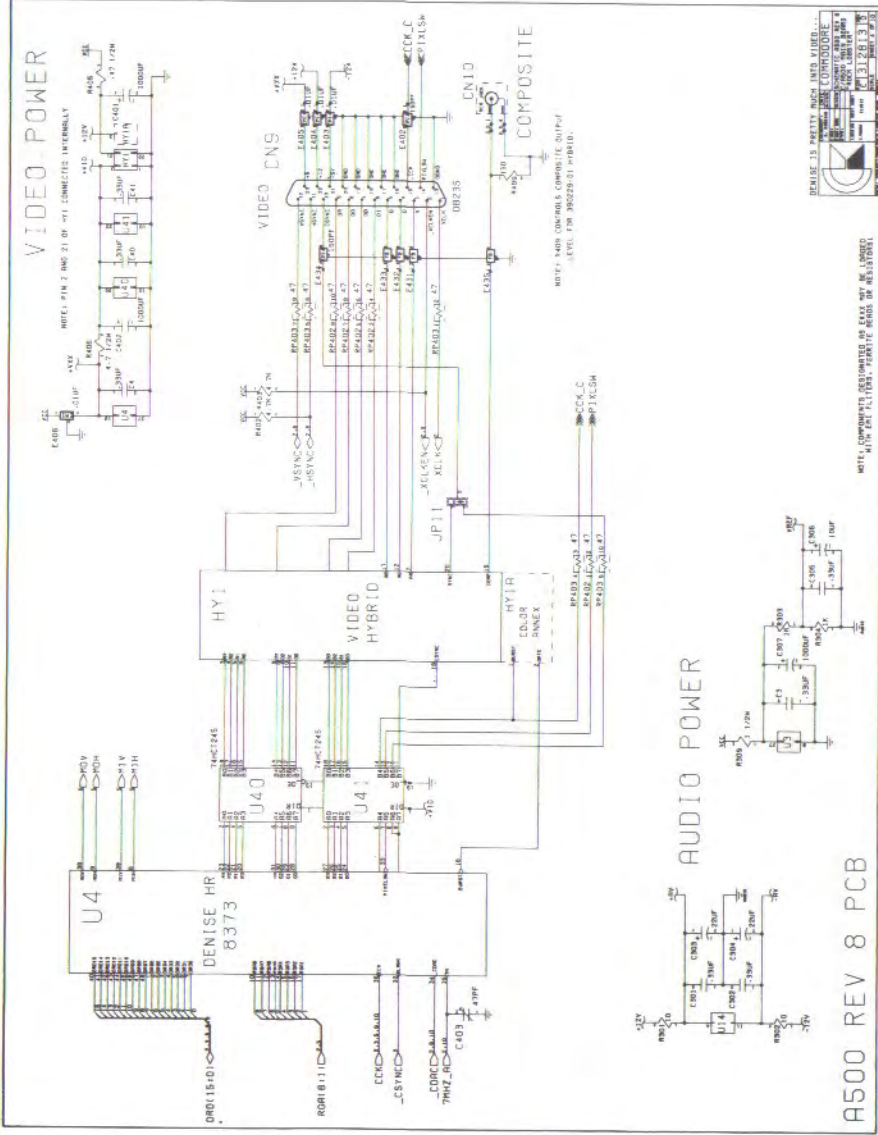


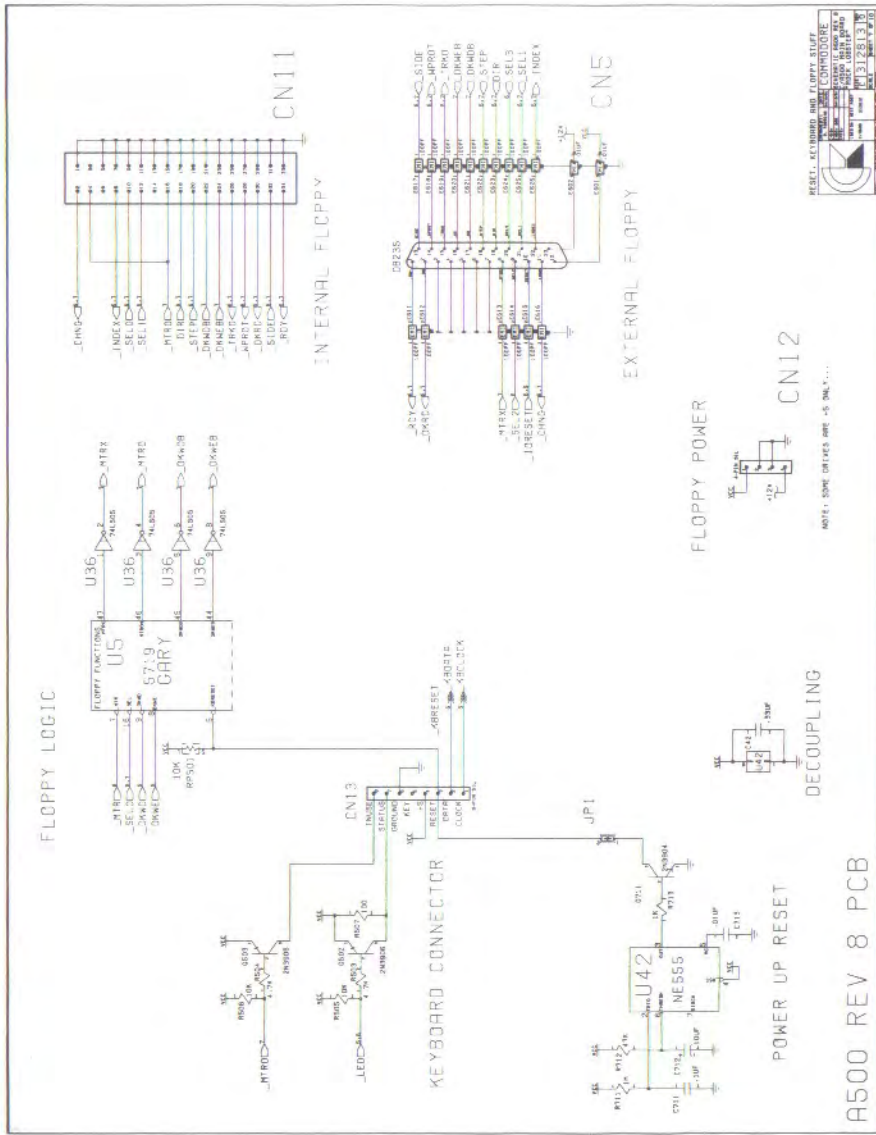
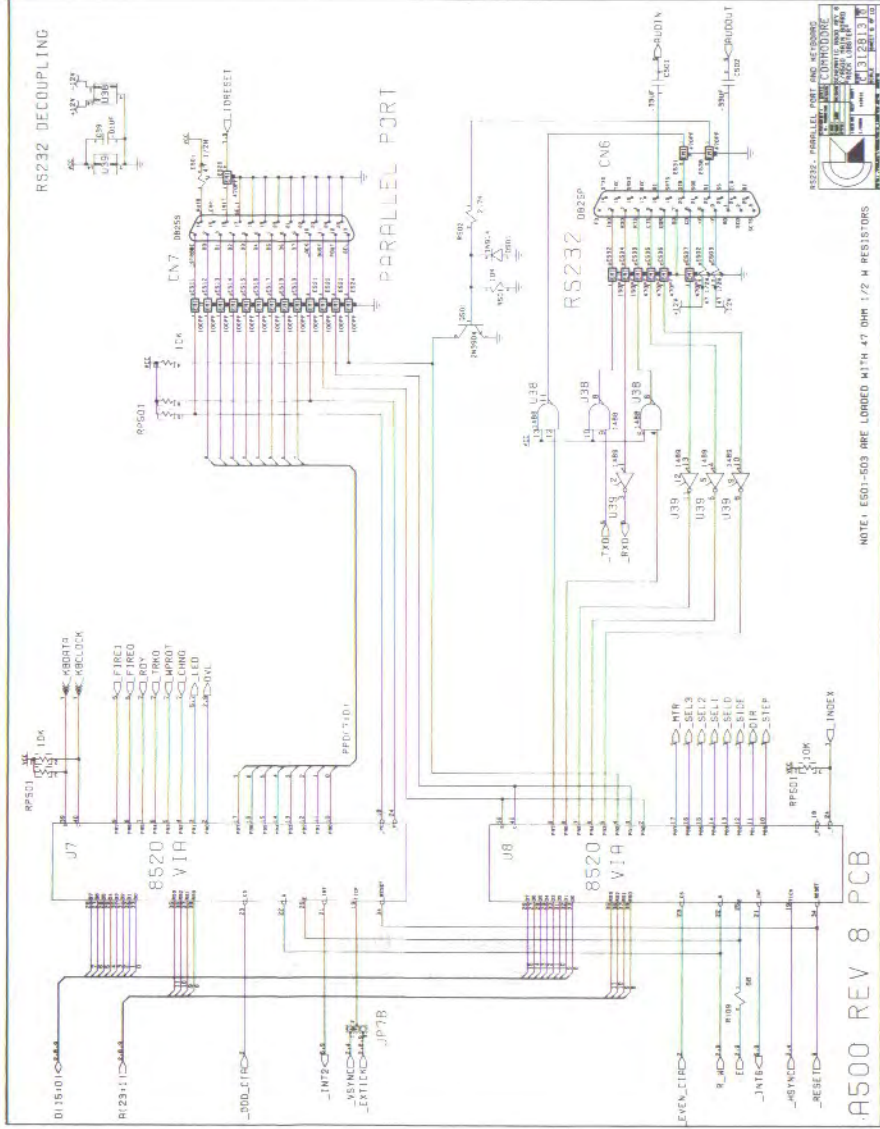


























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